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Fingerprints of core polarization in two-nucleon transfer reactions of halo nuclei

Tuesday, 27 March 2012 09:00 (20 minutes)

We discuss recent exclusive transfer experiments performed with low-energy
beams of two-neutron halo nuclei (11Li, 12Be). We compare the measured absolute differential cross sections with theoretical results that take into account
all the processes up to second order within the distorted wave Born approximation.
These calculations are based on a structure model of halo nuclei,
which takes into account correlations beyond those included in three-body models.
We find that effects associated with core ground state fluctuations and the coupling of valence nucleons with the excited states of the core, namely neutron self-energy and
the interaction induced by phonon exchange, are crucial to reproduce both structure and reaction data.

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